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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,188	09/10/2004	Noboru Kondo	TAKIT-0190	8961
23599 7590 08/20/2007 MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201			EXAMINER HIGGINS, GERARD T	
			ART UNIT 1709	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/507,188	Applicant(s) KONDO ET AL.	
	Examiner Gerard T. Higgins	Art Unit 1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5,6,8-10 and 12-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8-10 and 12-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>05/03/2005</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

### ***Specification***

3. The disclosure is objected to because of the following informalities: on page 2, line 1, please remove the capitalization of the word "of," on page 7, line 19 there is a new paragraph that has not been indented.

In addition, there are several instances wherein the translation of this document from Japanese to English has led to confusing sentences. One example is found on page 4, lines 11-13. The phrase "an inkjet recording medium characterized that obtained by providing a." Another example is on page 11, lines 12-18 where the phrase "if the recording layer is dry when the treatment solution is applied...is difficult to transfer the mirror surface finish" is confusing. This is not an exhaustive list therefore all due effort should be made to correct the other instances of non-idiomatic English in this specification.

Appropriate correction is required.

### ***Claim Objections***

4. Claim 2 is objected to because of the following informalities: the concentration of borate is provided however it is not placed in context with respect to anything else. The Examiner interprets this in light of the specification as meaning the concentration of borate in the treating solution. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 5, 6, 9, 10, 14, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It would appear that in claim 5 applicants wanted to express the ratio of binder "to" pigment in the recording layer, and that is how this claim is going to be interpreted. With respect to claim 6 it is not clear how one could achieve a maximum of 30wt parts of binder per 100wt parts of pigment as per claim 5, and also have the amount of binder be greater than 30 wt%. With respect to claims 9, 10, 14, and 15 the usage of the about symbol "~" in between the stated numeric ranges leads to an indefinite range of values. The Examiner assumes this was a typographical error and will treat these claims as if a "-" was used.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 1709

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3, 5, 8, 9, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitamura et al. (US PGPub 2001/0016249).

Kitamura et al. teach an "Ink Jet Recording Material" (Title) made by "forming a recording stratum containing fine particles of a specific pigment comprising at least one member selected from silica, aluminosilicate and  $\alpha$ -,  $\theta$ -,  $\delta$ - and  $\gamma$ -aluminas on the substrate" [0089]. Kitamura et al. teach that the paper sheet for the substrate is "mainly formed from a wood pulp" this wood pulp "include[s] mechanical pulps, chemical pulps and re-used paper pulps" [0132], which read onto applicants' "substrate having air permeability" (applicants' claim 1). Applicants define in their disclosure different substances that they deem appropriate types of air-permeable supports (page 5, line 7-17). Kitamura et al. also disclose that the recording stratum contains "a binder" wherein the "binder comprises at least one member selected from water-soluble polymers, for example, polyvinyl alcohol" [0143]. Kitamura et al. also teach that the recording material "preferably contains an image light resistance-enhancing agent comprising at least one member selected from the group consisting of phenolic compounds, boric acid, borate salts and cyclodextrin compounds" [0165]. They further teach that "[m]ore enhanced light resistance...can be obtained by using chlorides of divalent [metals] (sic)

Art Unit: 1709

especiallly, magnesium chloride or calcium chloride" [0170]. These teachings encompass all of the article limitations of applicants' claim 1. Applicants' also seek to define their article by the process in which it was made. Applicants' claim 1, lines 4-8 states that the treatment solution "solidifies said polyvinyl alcohol on the recording layer...and drying so as to confer gloss to said recording layer surface," which is a product-by-process limitation. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. Please see MPEP 2113 and *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

The teachings of Kitamura et al. mentioned above also anticipate the limitations of applicants' claim 3, wherein a magnesium chloride salt is used. Additionally, Kitamura et al. further define the meaning of borate salts or boric acid by disclosing the possibility of using "tetraborate salts," where the "salt-forming metals include alkali metals, for example, sodium and potassium, and alkaline earth metals, for examples, calcium[,] magnesium and barium" [0171]. Sodium tetraborate is borax; therefore these teachings anticipate the invention as claimed in applicants' claim 8. Kitamura et al. also disclose in their Example II-14 that the borax containing solution used to impregnate the ink receiving outermost layer was an "aqueous solution of 4% by dry solid weight or borax" [0447]. This anticipates applicants' claims 2 and 9, which are directed to using a treating solution containing a set percentage of borate, either 0.4-6 wt% or 0.5-4.5 wt% respectively.

Art Unit: 1709

Kitamura et al. further teach that the recording stratum is "preferably formed in a total amount of 1 to 100 g/m<sup>2</sup>, more preferably 2 to 50 g/m<sup>2</sup>" [0146]. This anticipates applicants' claimed coating amount in claim 15.

Kitamura et al. also teach that there is a "specific limitation to the solid weight ratio of the pigment to the binder," the solid weight ratio (pigment to binder) is "preferably adjusted within the range of 100/2 to 100/200, more preferably from 100/5 to 100/100" [0144]. In the next paragraph Kitamura et al. disclose that the water-soluble polymer binder is "preferably 20 parts by weight or less per 100 parts by weight of the pigment" [0145]. This anticipates applicants' claim 5.

Finally, Kitamura et al. disclose the method of applicants' claim 16 in the description of the related art. They reveal that a "cast-coated paper sheet produced by contacting a wetted coating layer of the recording sheet with a mirror-finished peripheral surface of a heating drum under pressure, and drying the coating layer to transfer the mirror-like surface to the coating layer surface, is known" [0021].

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



Art Unit: 1709

10. Claims 12, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura et al. (6,689,432).

As mentioned previously Kitamura et al. disclose several methods to enhance the light resistance of the recording material. They mention using borate salts to accomplish this, specifically using "tetraborate salts," where the "salt-forming metals include alkali metals, for example, sodium and potassium, and alkaline earth metals, for examples, calcium[,] magnesium and barium" [0171]. Also, Kitamura et al. disclose in Example II-14 that a borax containing solution used to impregnate the ink receiving outermost layer was an "aqueous solution of 4% by dry solid weight of borax" [0447]. However, Kitamura et al. fail to teach an inkjet recording medium wherein the concentration of the water-soluble magnesium salt is 0.5-6 wt% in terms of anhydride. It is entirely possible to replace the sodium cation in borax with a magnesium cation since they are functional equivalents as disclosed by Kitamura et al. Subsequently, a 4% by dry solid weight of the magnesium tetraborate would dissociate in solution to form 4% magnesium cation and 4% tetraborate. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the sodium cation of borax with a magnesium cation, which would then render obvious applicants' claim 12.

Kitamura et al. disclose a releasing agent, lecithin in their "Coating liquid II-(17)." This releasing agent is heated by a "casting drum at a peripheral surface temperature of 85° C," which allows the layer to be more easily peeled from the casting drum [0477-8]. However, Kitamura et al. fail to teach a releasing agent with a melting point of 90-150°

Art Unit: 1709

C. There are numerous releasing agents available in the art that melt at certain temperatures. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose an appropriate releasing agent for the claimed recording medium such that the releasing agent would melt in the range of 90-150° C.

11. Claims 1-3, 5, 8-10, and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura et al. (6,689,432) in view of Yoshida et al. (JP2002-283697), (JP2002-293004), or (WO 02/076756) all members of the same patent family.

Kitamura et al. as described above (section 8) teach that the recording material "preferably contains an image light resistance-enhancing agent comprising at least one member selected from the group consisting of phenolic compounds, boric acid, borate salts and cyclodextrin compounds" [0165]. However, Kitamura et al. fail to teach the specific ratio range of boric acid and a borate salt in applicants' claim 10. Yoshida et al. (JP2002-283697) disclose using a solution of "way acid chloride and a way acid" in a ratio of 0.25/1 - 2/1 [0014]. Judging by the US patent family equivalent of these documents, which does not fall under the auspices of prior art, by "way acid" Yoshida et al. mean boric acid. It would have been obvious to one having ordinary skill in the art at the time the invention was made to alter the invention as shown in Kitamura et al. to include boric acid and a borate salt in a specific ratio as presented by Yoshida et al.

Kitamura et al. as described above (section 10) disclose a releasing agent, lecithin in their "Coating liquid II-(17)." This releasing agent is heated by a "casting

Art Unit: 1709

drum at a peripheral surface temperature of 85° C," which allows the layer to be more easily peeled from the casting drum [0477-8]. However, Kitamura et al. fail to teach a releasing agent with a melting point of 90-150° C. Yoshida et al. disclose using a remover in the recording layer that has a melting point of 90-150° C [0016]. There are numerous releasing agents available in the art that melt at certain temperatures. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make a simple substitution of the known releasing agent in Kitamura et al. for another as shown by Yoshida et al., the predictable result being the invention as claimed in applicants' claim 14.

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 1709

13. Claims 1-3, 5, 6, 8-10, 12-16 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7-13, 15-17, 19, and 20 of U.S. Patent No. 7,033,016. Although the conflicting claims are not identical, they are not patentably distinct from each other because they describe an article made from a substrate, a binder, a borate/boric acid mixture with a specific ratio, and a remover. Equally, it describes the percentage of binder in the recording layer as well as the ratio of binder to pigment. Finally, it describes the melting temperature used with respect to the remover compound.

14. Claims 1-3, 5, 6, 8-10, 12-16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/509,374. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process of Endo et al. would generate an identical article as claimed by applicants.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see PTO-892.

Art Unit: 1709

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gerard T. Higgins whose telephone number is 571-270-3467. The examiner can normally be reached on M-F 7:30am-5pm est. (1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**D. LAWRENCE TARAZANO**  
**PRIMARY EXAMINER**



Gerard T Higgins  
Examiner  
Art Unit 1709

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